IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re National Stage Application of PCT/FI99/00821

RINNE

Group Art Unit: Not Yet Assigned

Appln. No.: 09/806,947

Examiner: Not Yet Assigned

Filed: April 6, 2001

FOR: A DATA SEGMENTATION METHOD IN A TELECOMMUNICATIONS SYSTEM

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May 24, 2001

SUPPLEMENTAL PRELIMINARY AMENDMENT

Hon. Commissioner of Patents
Washington, D.C. 20231

Sir:

Supplemental to the Preliminary Amendment filed April 6, 2001 and prior to initial examination of the above-identified application, please amend the application as follows:

IN THE CLAIMS:

Please enter the following amended claims:

1. (Amended) A data segmentation method in a telecommunications system, comprising:

segmenting larger data units of a higher layer into smaller protocol data units of a lower layer so that each lower layer protocol data unit includes one or more data segments each containing data from a different one of the upper layer data units;

providing the lower layer protocol data units containing two or more data segments, with segmentation length information which otherwise indicates length of the data segments;

indicating with predetermined values of the segmentation length information, special information about the higher level protocol data units instead of the length of the segments;

transmitting the lower level protocol data units to a receiving end; and

assembling the segmented higher level data unit at the receiving end by means of the segmentation length information.

2. (Amended) The method of claim 1, wherein the special information includes indication whether the higher layer data unit ends in a current data segment or continues to a next lower level protocol data unit.

3. (Amended) The method of claim 1, further comprising indicating with a predetermined value of the segmentation length information that the rest of the lower level protocol data unit contains padding until a next segmentation length information or a next lower level protocol data unit contains padding.

4. (Amended) The method of claim 1, further comprising indicating with the segmentation length information an exact point in the end of the lower layer protocol data unit that the higher layer data unit ends.

5. (Amended) The method of claim 1, further comprising indicating with a predetermined value of the segmentation length information that the higher layer data unit carried in a current data segment continues to a next lower level protocol data unit.

6. (Amended) The method of claim 1, further comprising providing no segmentation information in a lower layer protocol data unit which contains data only from a single one of the higher layer data units and no padding.

7. (Amended) The method of claim 1, further comprising providing segmentation information in a lower layer protocol data unit which contains data only from a single one of the higher layer data units and padding.

8. (Amended) The method of claim 1, further comprising:

providing each lower level protocol data unit with two or more payload units of a predetermined length, the payload units being a smallest unit in a retransmission protocol employed;

carrying the segmented higher layer data units in the payload units;

providing a segmentation indicator field in a beginning of one or more of the payload units in the lower level protocol data unit, if required; and

indicating in a header of the lower layer protocol data unit which one or ones, if any, of the payload units contain the segmentation length information.

9. (Amended) The method of claim 8, further comprising providing a segmentation indicator field in a beginning of a first one of the payload units for indicating segmentation information for all segments in the lower level protocol data unit, if required.

10. (Amended) A telecommunications system, comprising

an upper protocol layer including upper layer data units;

a lower protocol layer including protocol data units having a payload size smaller than the upper layer data units;

means segmenting the upper layer data units for insertion into smaller protocol data units of a lower layer so that each lower layer protocol data unit includes one or more data segments, each containing data from a different one of the upper layer data units;

means for inserting segmentation length information which indicates length of the data segments at least in the lower layer protocol data units containing two or more data segments;

means for providing a predetermined value in the segmentation length information to a receiver, the predetermined value including special information about the higher level data units instead of the length of the data segments; and

means for assembling the segmented higher level data units from received lower layer protocol data units at the receiver by means of the segmentation length information in the protocol data units.

11. (Amended) The system of claim 10, further comprising a predetermined value of the segmentation length information indicating to the receiver that a rest of the lower level protocol data unit contains no padding until a next segmentation length information or a next lower level protocol data unit contains padding.

12. (Amended) The system of claim 10, further comprising a predetermined value of the segmentation length information indicating to the receiver that the higher layer data unit carried in the current data segment continues to a next lower level protocol data unit.

13. (Amended) The system of claim 10, wherein the segmentation length information points exactly to an end of the lower layer protocol data unit where the higher layer data unit ends.

14. (Amended) The system of claim 10, further comprising:

two or more payload units of a predetermined length in each lower level protocol data unit, with two or more payload units of a predetermined length for carrying the segmented higher layer data units, the payload unit being a smallest unit in a retransmission protocol employed;

a segmentation indicator field in a beginning of one or more of the payload units in the lower level protocol data unit, if required; and

at least one indicator in a header of the lower layer protocol data unit for indicating which one or ones, if any, of the payload units contain the segmentation length information.

See the attached Appendix for the changes made to effect the above claims.